



Cal Poly Pomona
Foundation, Inc.

Mobile POS Solutions

January 2014

Current Solutions

- Poly Trolley Food Truck
 - Micros Tablet POS (and WS5A's)
 - KDS w/wireless bump bar)
 - Cradlepoint cellular router (LAN/WAN)
 - Spot Gen 3 GPS (Real-time tracking)

Current Solutions

- Panda Express (Independent Franchise)
 - Cradlepoint (network bypass for PCI)
- Shop 24 (Robotic Vending)
 - Shop 24 POS/Reader (Split card processing)
 - Cradlepoint (Cloud Based Management)
- Edison Lobby Store
 - Micros WS5A
 - Cradlepoint (Lessee security request)

General PCI Considerations

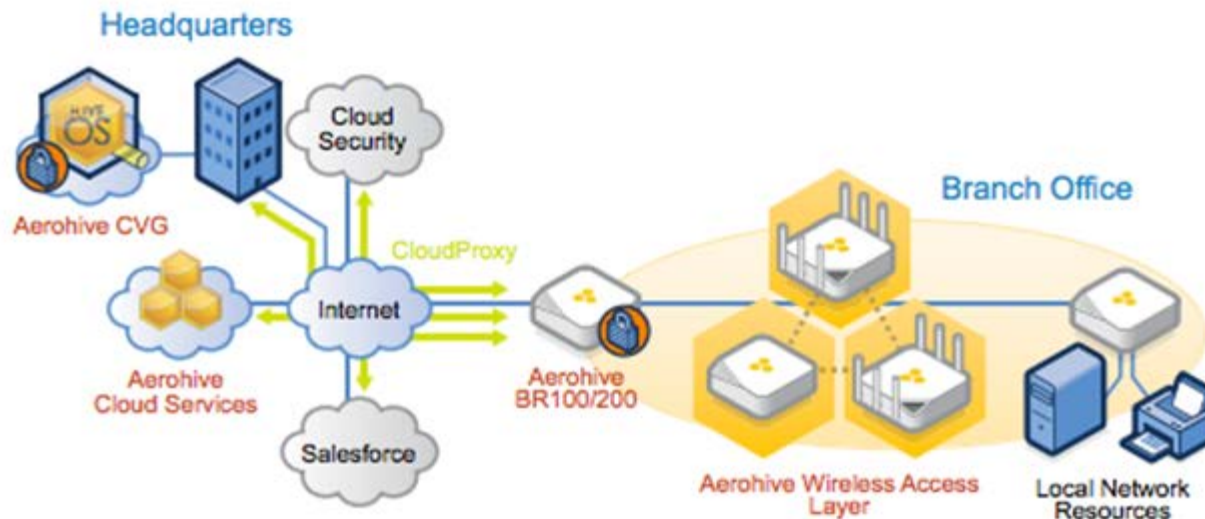
- **To protect customer cardholder data** with the greatest security and minimal risk when processing transactions follow these key points...
 - **Do not Transmit any confidential cardholder data via email or other communication platform** unless the data is fully encrypted
 - **Do not store confidential cardholder data** on servers, local hard drives, or external (removable) media including floppy discs, CDs or thumb (flash) drives unless encrypted and in full compliance with PCI DSS

Mobile PCI Considerations

- ◉ Micros Restaurant v4.11 for PCI DSS v2 (or 5.2)
- ◉ Private network or P2PE (On campus servers)
- ◉ EMV (2015-16) and NFC (Down the road?)
- ◉ Unintended PCI service provider (Panda)
- ◉ Cloud POS services (Shop 24 – on/off campus)

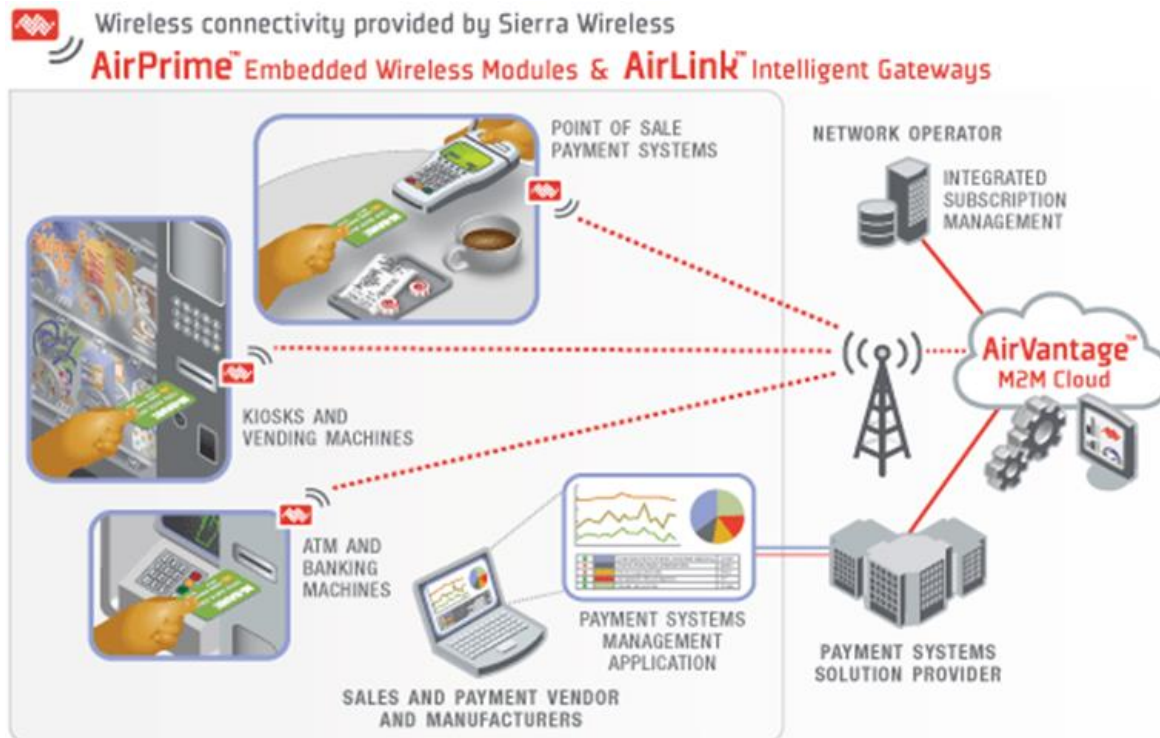
Next Generation

- **Mobile Private Network**
 - **Aerohive BR200** (scalable, virtual management)



Next Generation

- **Sierra Wireless GX440** (scalable, industrial)



Next Generation

- **Integrated P2PE/EMV/NFC**
 - **Veriphone MX925**

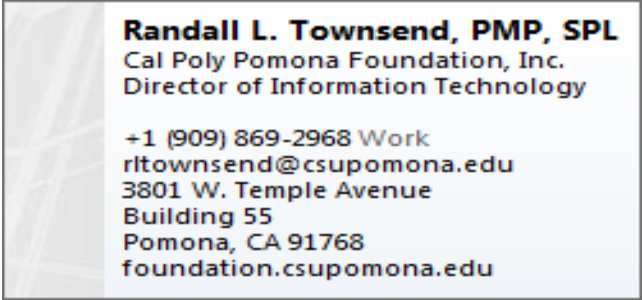


- **Hosted Mobile Services**
 - **Cbord Get (Funds, Food, Venues)**

[Introducing GET Food™ Online and Mobile Ordering](#)

For More Info...

- **Contact:**

A business card for Randall L. Townsend, PMP, SPL. The card has a light blue background with a faint geometric pattern on the left side. The text is in a sans-serif font.

Randall L. Townsend, PMP, SPL
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Director of Information Technology

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- **Session notes will be posted after the conference**

Thank you!



IBM SPSS Virtual Hands-On Workshop

Getting More Value from Your Data



Workshop Learning Objectives

In today's workshop, you will learn:

- What is Predictive Analytics
- How IBM's SPSS Modeler can be applied to:
 - Predict customer churn
 - Identify the best products to offer a retail customer using Market Basket Analysis
 - Predict what manufacturing equipment will fail in order to fix before it breaks
 - Organize a bank's customers into segments and recommend a marketing strategy
- How four businesses implemented predictive analytics solutions and created significant value



- Why businesses like these are choosing IBM SPSS

Predictive Analytics? We do it everyday

Personal model: when to drive in to work

First day on job

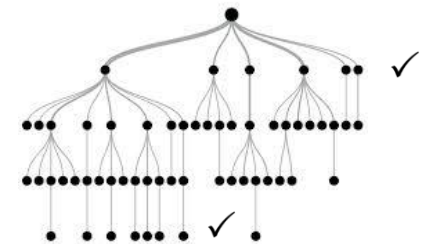
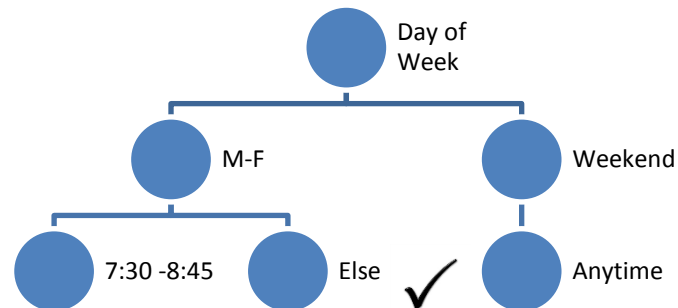
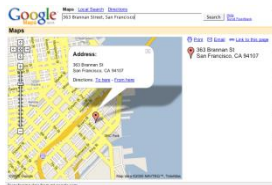
- Address
- Google Maps
- Device

Six Months

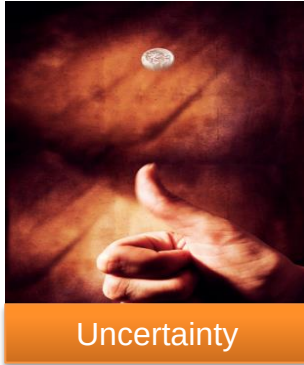
- Day of Week
- Time of Day
- Holiday

Twelve Months

- Construction Patterns
- School Calendar
- Weather / Season



Analytics in Context



Uncertainty

- Most business decisions are made with the future in mind.
- However, nearly all information we have is based on the past or the present.
- At first look, the future in many cases can appear random



Traditional Analytics

- Traditional Analytics uses historical data, charting, trend analysis, etc. to discover patterns and remove some of the uncertainty.
- Doing so informs better decisions which translates into better outcomes, such as quality, response rates translating to greater profits.

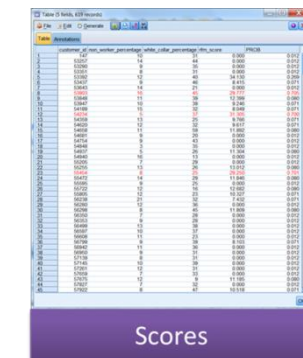
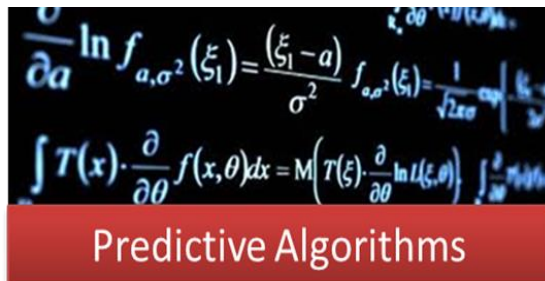


Predictive Analytics

- However some patterns are too complex to approach using traditional techniques.
- This is where Predictive Analytics comes in.

Predictive Analytics Defined

Predictive analytics pairs historical data with tuned algorithms in order to reveal actionable insights, reduce uncertainty, and systematically quantify the likelihood of future events (scoring).



Applications of Predictive Analytics

- **Advance Planning Functions**
 - » Forecast key inputs
 - » Uncover complex relationships
 - » Understand, simulate and account for variance
- **Optimize Processes**
 - » Reduce downtime
 - » Optimize capital
 - » Maximize resource
 - » Execute operational strategy
 - » Boost productivity
 - » Improve quality
- **Increase Customer Value**
 - » Improve acquisition rates
 - » Optimize contact frequency
 - » Improve offers
 - » Reduce cost of sale
 - » Group like customers (segmentation)
- **Manage Risk**
 - » Reduce customer churn
 - » Sharpen fraud detection
 - » Execute predictive maintenance
 - » Minimize warranty claims
 - » Troubleshoot failures

Value of Predictive Analytics

- **Forward Facing**
- **Predictive Accuracy**
 - » Concentrate resources where they count most
- **Speed**
 - » Speed to analyze
 - » Speed to deploy
 - » Speed to score
- **Insight**
- **Prescription**
 - » Beyond predicting what will happen, prescribe what to do about it
- **Optimization**
 - » Deploy scarce resources for maximum effect

Introduction to IBM SPSS Modeler

IBM SPSS Modeler

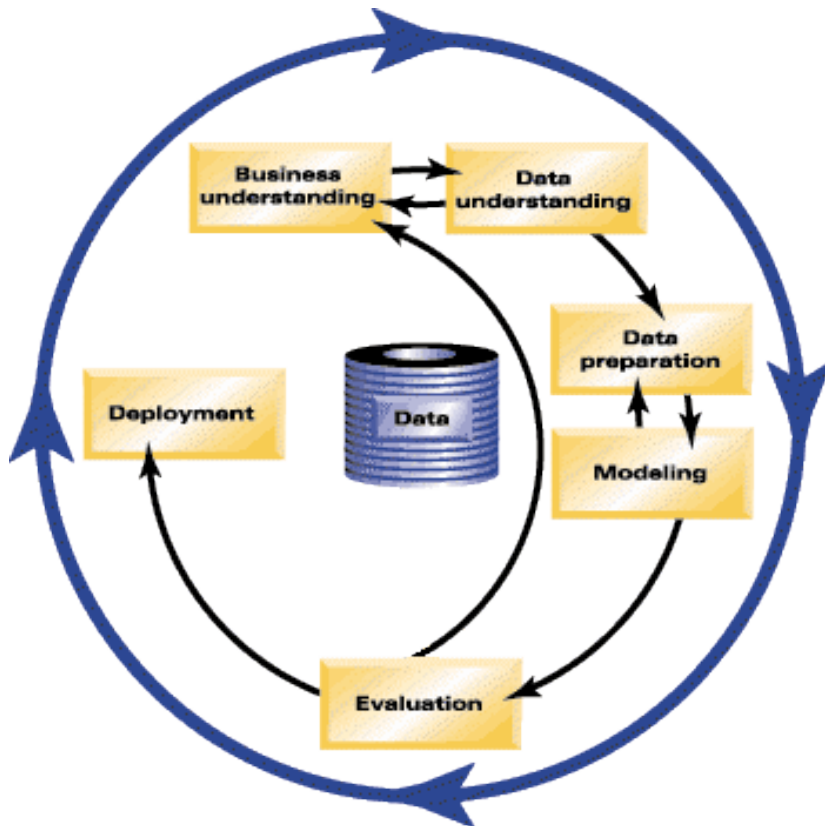


SPSS Modeler - IBM's flagship data mining solution:

- **Intuitive:** Visual / logically organized functions and easy to create and read work
- **Fast:** automates critical and complex data mining functions effectively and scores rapidly; model development goes quickly
- **Impactful:** ease of deployment and extensive solution capabilities translate to a strong value proposition (financial, tactical, and strategic)
- **Versatile:** a broad and deep set of advanced predictive analytic solutions
- **Easy** to learn!

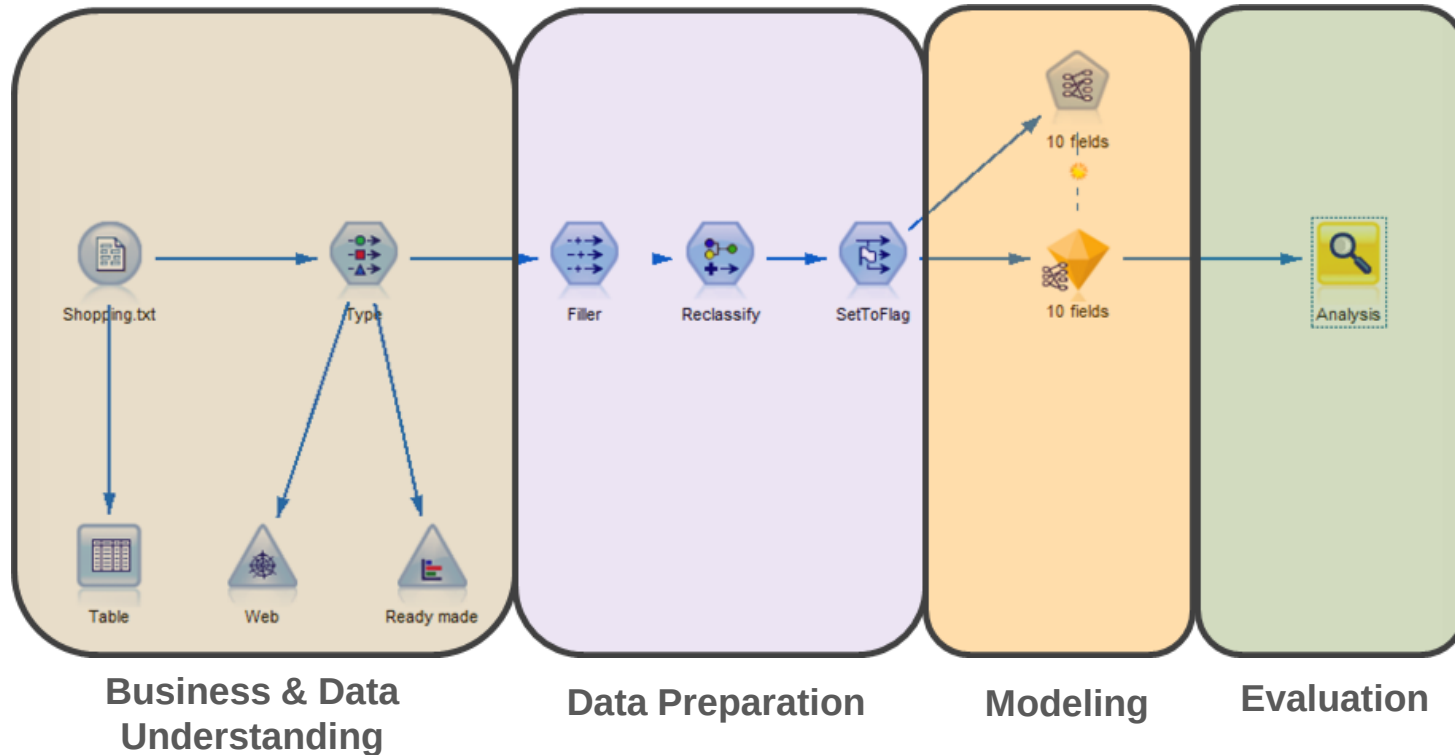


CRISP Data Mining



- **C**Ross-**I**ndustry **S**tandard **P**rocess
Model for **D**ata **M**ining
- Describes Components of Complete Data Mining Project Cycle
- Shows Iterative Nature of Data Mining
- Vendor and Industry Neutral

CRISP in SPSS Modeler



Deployment



Model Techniques



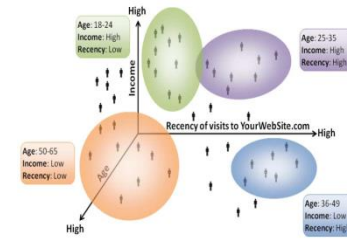
Classification

- ✓ Predicting Yes/No (flag) questions; examples: Churned, Not churned; Failed, Not Failed
- ✓ Multiple Choice: e.g., Red, Yellow, Blue
- ✓ Numeric: e.g., lifespan



Association Rules (Market Basket)

- ✓ Creating rules of item association based on historic behavior; examples: analyzing items purchased together (same shopping cart)



Segmentation (Clustering)

- ✓ Grouping things based on similar attributes; e.g., customers, prospects, products, businesses



Workshop Exercises

Workshop Exercises

Exercise Focus	Case Study	Exercise Objective	Predictive Model Type	
Customer Churn		Identify likely churners	Classification	I ntuitive
Retail Analytics		Find next best product	Market Basket	F ast
Quality		Fix before it breaks	Auto-Classify / Feature Selection	I mpactful
Customer Segmentation		Group your customers	Clustering	V ersatile

Easy to learn

Exercise One:

Customer Churn

Classification

Case Study: XO Communications

Company:  communications

XO Communications is a US-based national communications service provider of VoIP, voice, network, carrier, wholesale, and hosted services. **XO** serves businesses, government, domestic and international telecommunications carriers, cable companies, content providers, and mobile wireless companies.

Business Challenge:

One of the biggest business challenges for telecommunications companies is **managing customer churn**.

Although **XO** client services managers were conducting regular outreach to large customers they deemed at risk, customers in the midsize business group were too numerous to cost-effectively manage and, as a result, were more likely to churn.

Case Study: XO Communications

Solution:

Deployed IBM SPSS predictive analytics to identify at-risk customers, enabling client services agents to focus their proactive outbound “health check” calls.

Created – and score each month – a statistical model that scores all customers on likelihood to churn. Client service teams contact high-risk of churn customers and proactively ensure if their service needs are being met.

Benefits:

The company’s new ability to pinpoint and preempt customer churn:

- **Reduced customer churn** from 1.9 percent to 1.4 percent in the first year
- **Increased retention rates** by 60 percent.
- **A 376 percent annual return on investment.** The project paid for itself within five months, and provides an annual net benefit of over \$3.8 million.

Exercise 1: Customer Churn

Hello Telco, Inc.

Purpose:

- Learn how to use SPSS Modeler to identify customers likely to churn via classification modelling.

Scenario:

- As the Director of Customer Retention at Hello Telco, Inc., you will create a customer churn model that defines the target of a new customer retention campaign.

SPSS Modeler Exercise Objectives:

- Preview Data within an Input Node and review Type Node
- View data via Data Audit, Table and Distribution
- Create a Decision Tree Model predicting churn and review output
- Evaluate Model Accuracy

Exercise Two: **Retail Analytics**

Association

Case Study: Redcats Group

Company: REDCATS 

From clothing to contemporary furnishings, the **Redcats Group** distributes fashion and lifestyle products both online and in its stores all over the world. It owns 17 European and American brands, of which OneStopPlus, BrylaneHome, The Sportsman's Guide, Daxon, Vertbaudet, La Redoute and Cyrillus are among the best known.

Business Challenge:

The **Redcats Group** acquisition of 17 brands yielded 24 MM active customers. Each of the brands had their own dedicated analytical group and most analysts used Base SAS.

In order to align the analytical needs of the brands and process the customer activity volume, the **Redcats Group sought a common, user-friendly predictive analytics tool that would be able to operate in a Big Data environment.**

Case Study: Redcats Group

Solution:

The Redcats Group opted **to pair their new big data storage and service solution with SPSS analytics** to save on costs, improve processing speeds, broaden analytic capabilities, and minimize deployment time.

Deployment was highly successful and fast: one or two day training sessions and all SAS scripts were ported to SPSS in three weeks.

Benefits:

- **Processing Speed is now 10X Faster**
- **ROI: 112%**; reduced technology costs; payback of 11 months
- **Average annual benefit: €519,759**
- **Broader range of deployment** among analysts
- **Increased visibility and collaboration** across organizations given greater participation and easier sharing
- **Better human resources management** – shorter training cycles

Exercise 2: Market Basket Analysis

Quirky Imports

Purpose:

- Learn how to execute a Market Basket Analysis in SPSS Modeler and why.

Scenario:

- As the Marketing Director At Quirky Imports, you must create a product-centric offer based on purchase behavior and profile the targeted customers.

SPSS Modeler Exercise Objectives:

- Create and manipulate a Web Graph
- Create an association rules model
- Select customers for a next best product offer

Exercise Three:

Predictive Maintenance and Quality

Classification

Case Study: BMW

Company:



BMW wins customers with premium designs and high quality. **BMW** collects a wide range of vehicle and repair data from the vehicle error memory and from customer and dealer feedback in order to run specific analyses and feeds into a continual process of quality improvement.

Business Challenge:

The challenge facing the **BMW Group** consisted of the need to manage and efficiently analyze vast quantities of data, from sources such as vehicle error memories, dealer feedback and repair reports, to obtain meaningful data to feed the improvement process.

Case Study: BMW

Solution:

Corporate-wide deployment of IBM SPSS Data Mining tools under the name AVAQS (Advanced Quality System). This system enables transparent embedding of complex analytical flows within other applications.

Around 1,000 employees use AVAQS in a range of tasks that include ad hoc analysis and predictive maintenance.

Benefits:

- **More effective and rapid Quality analytic capability;** being able to spot problems traditional BI techniques could not diagnose.
- **Fast queries on large volumes of data;** wide deployment of ad hoc analytics
- **More insightful analyses:** pattern recognition, as well as statistical and mathematical processes, are used to identify new correlations and trends.
- **The platform is installed across manufacturing facilities** including parts manufacturing and foundries.

Exercise 3: PMQ

E. P. Fell Mining

Purpose:

- Learn how to use SPSS Modeler to identify what to fix *before* it breaks.

Scenario:

- E.P. Fell Mining is experiencing an unacceptable level of downtime due to broken drills. You have been tasked with modifying the maintenance strategy using predictive maintenance.

SPSS Modeler Exercise Objectives:

- Merge two data sources
- Discover predictors of failure via the Feature Selection node
- Build predictive model using Auto-Classifer
- Partition data into Train/Test and evaluate accuracy of model
- Build a deployment version of model that can be integrated into maintenance/servicing plan

Exercise Four:

Customer Segmentation

Clustering

Case Study: First Tennessee

Company:  **FIRST
TENNESSEE**

First Tennessee Bank, a Memphis-based bank with more than \$25 billion in assets.

First Tennessee Marketing collected more than 200 data elements to promote offerings and services for its core consumer product areas.

Business Challenge:

First Tennessee wanted to switch from being product focused to customer focused, and also wanted to spend their marketing dollars more effectively.

First Tennessee also observed they a rapid increase in customer data volume, but not with a concomitant increase in customer insight.

First Tennessee wanted a solution that would be intuitive and easy to use.

Case Study: First Tennessee

Solution:

First Tennessee Bank achieved the ability to make intelligent, customer-centric offers by **adopting SPSS and executing campaigns based on customer segmentation and cross-sell models generated in SPSS.**

Benefits:

By using IBM Business Analytics to analyze data related to customer activity and historical marketing campaigns, First Tennessee Bank reduced its marketing costs, increased net income, and improved the productivity of marketing staff.

- **ROI: 642%**
- **Payback: two months**
- **Average annual benefit: \$899,095**

Exercise 4: Segmentation

Big Z Bank

Purpose:

- Learn how to execute Segmentation in SPSS Modeler and why.

Scenario:

- Big Z Bank wants to align their marketing strategy and offerings to better meet customer needs. To accomplish this, you will segment their customers and explore the customer segments using visualization tools.

SPSS Modeler Exercise Objectives:

- Execute an Auto-cluster node in order to segment customers
- Explore customer segments using visualization tools
- Identify a segment to target for a campaign

Summary

Functional Area

- Import data and record manipulation
- Prepare data for modeling
- Learn what modeling techniques to apply when and how
- Ensure model quality
- Score, Rank and Output

SPSS Modeler Functions

- Data Source, Select, Sampling and Aggregation
- Type, Filter, Feature Selection, Derive, and Transform Nodes
- Classify, Segment and Association Modeling Nodes
- Model Training; Partition, Evaluation and Analysis Nodes
- Scoring, Ranking, and Output



Interested in learning more?

- Visit our microsites to see demos, download white papers, and case studies
 - www.IBMSPSS.com
 - www.IBMPredictiveAnalytics.com
- Request more information
 - E-mail a request to sales@dataclaritycorp.com
 - Submit a request at www.IBMPredictiveAnalytics.com
 - Call us at 800.963.5508

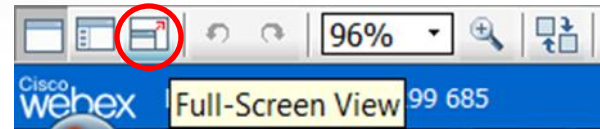
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Questions and Answers

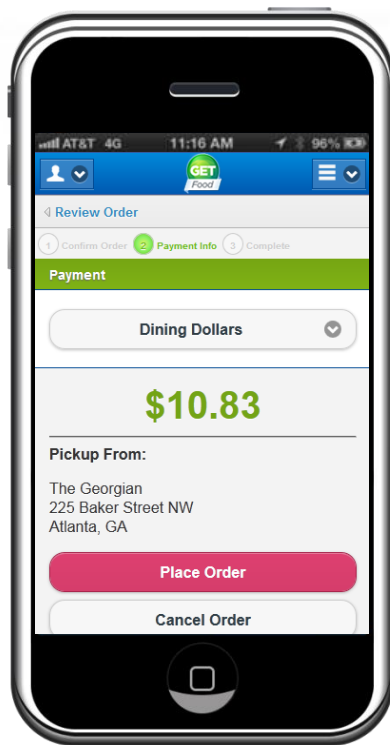


Webinar Tips

- You must call the teleconference line to hear the audio.
- At the end of the presentation, we will open the lines for questions.
- Use the Full Screen View button to maximize your screen.
- Use the Chat or Q&A box to communicate with the presenter(s) and host during the presentation.
- If you lose your network connection, please log out of the session and re-enter. If you are still having difficulty, please contact WebEx support at 1-888-569-3848.



Introducing GET Food™



Susan Chaffee
Product Manager

cbord®

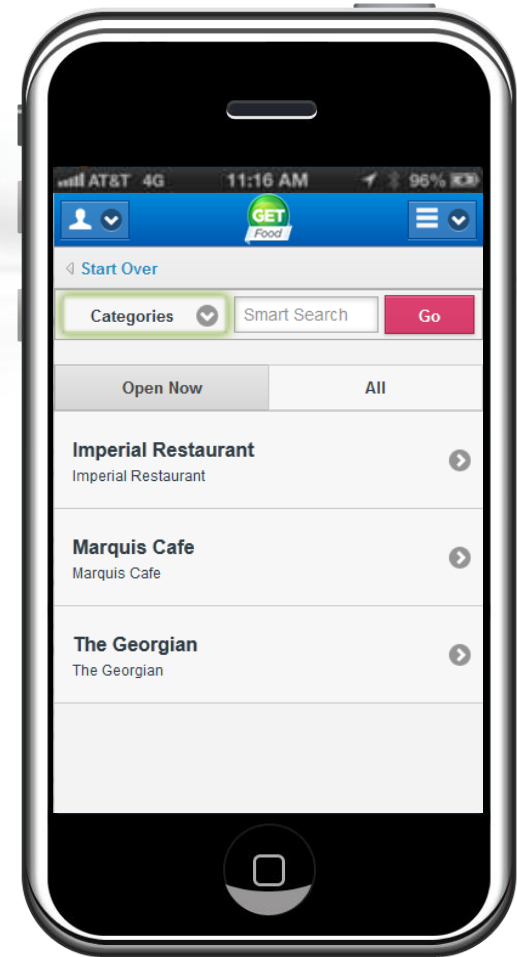
What is GET Food?

- Online and mobile ordering
- On campus and off
- Fully integrated with CBORD campus card systems



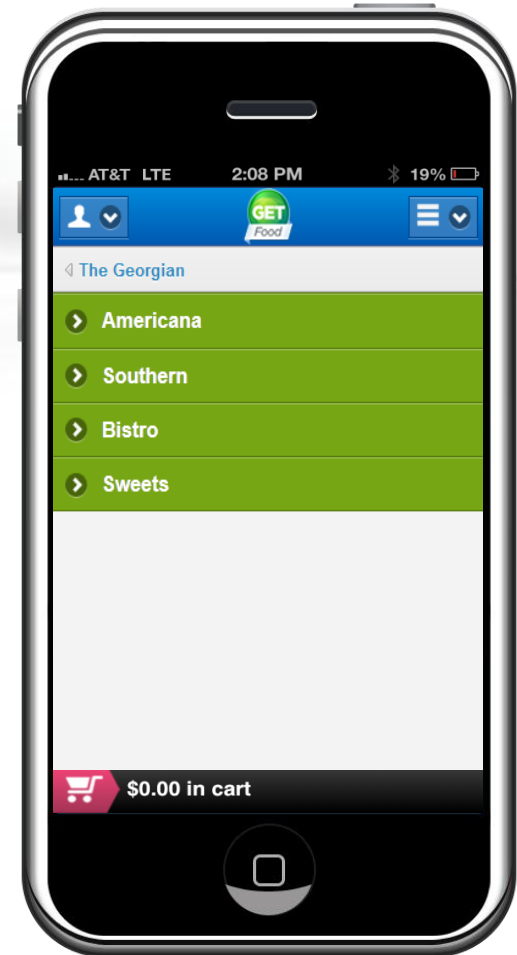
How Does it Work?

- Select a venue



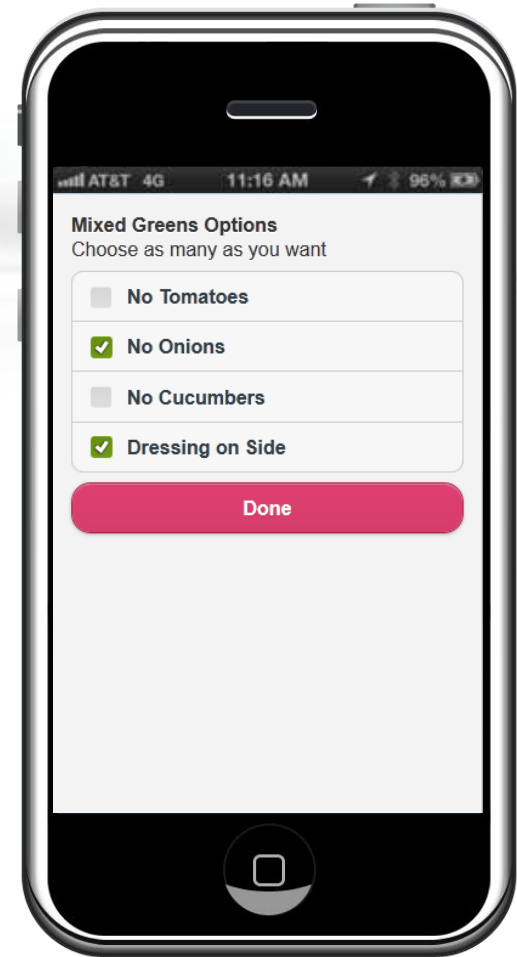
How Does it Work?

- Select a venue
- View menus



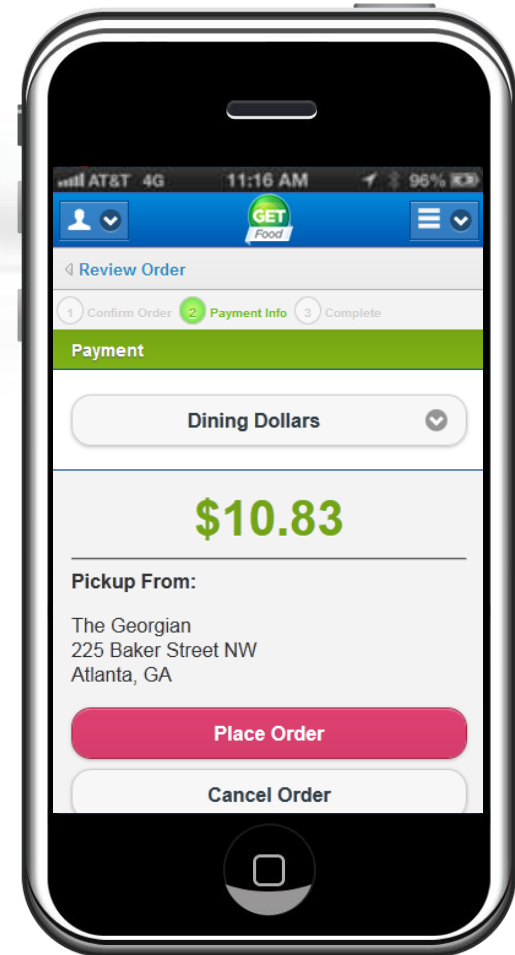
How Does it Work?

- Select a venue
- View menus
- Customize



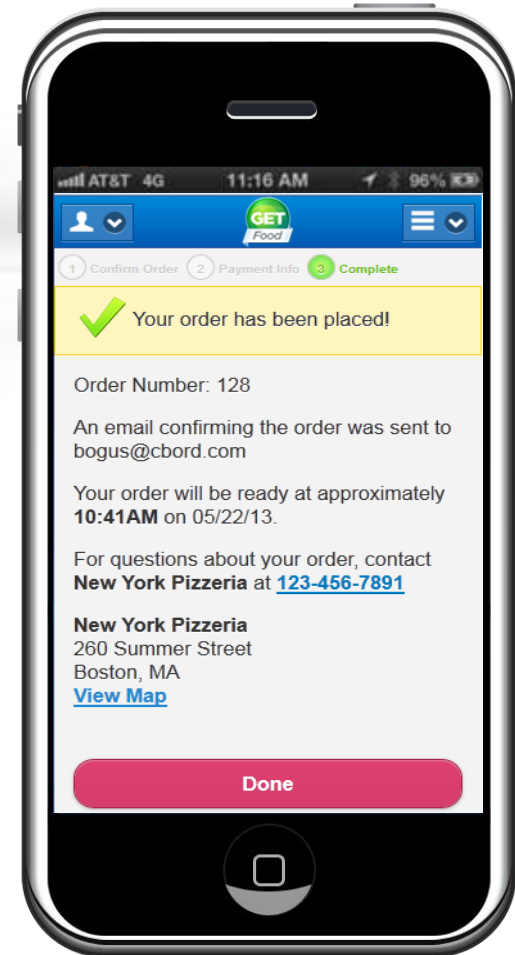
How Does it Work?

- Select a venue
- View menus
- Customize
- Place order, pay with campus card funds



How Does it Work?

- Select a venue
- View menus
- Customize
- Place order, pay with campus card funds
- Order is emailed to venue
- Venue prepares order for pickup or delivery



Demo

GET: A Complete Solution

- Cloud-based commerce environment that is convenient, secure, and fun
- Multiple components (and growing)
 - GET Food
 - GET Funds
 - GET Venues
 - More to come!

Questions?

Ready to learn more?

Please contact:

Stephen Crumrine

Business Development Representative

smc2@cbord.com

607.257.2410

Benefits of GET Food

- Expand students' dining options and improve convenience
- Offer merchants increased visibility with students
- Extend the power of your campus card system while driving revenue

For Colleges and Universities

Introduction

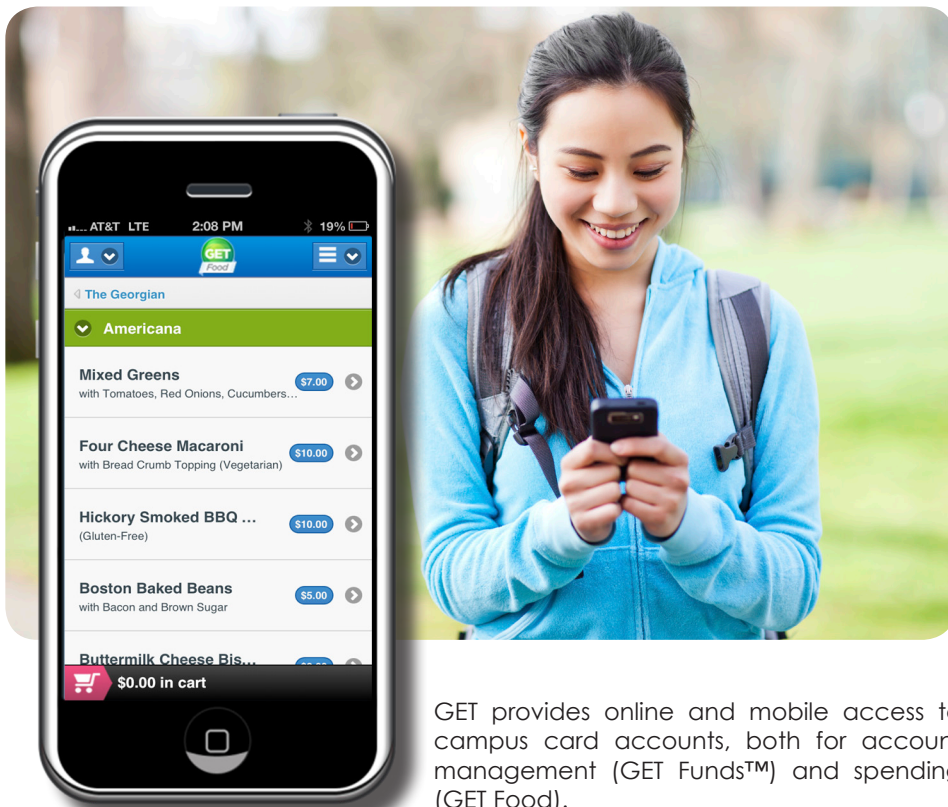
GET Food™ from CBORD® is an online and mobile ordering solution designed to expand your students' dining options and improve convenience. Easy to access on a smartphone or computer, GET Food extends the purchasing power of your campus card to venues on campus and off, any time.

Online and Mobile Ordering, Simplified

With GET Food, online and mobile ordering has never been easier. Students simply navigate to their university's GET Food website from their computer or smartphone (no app required!) and log in to view menus from participating merchants and venues, on campus and off. After walking through the simple ordering process, students place their orders, which are sent to the venue via fax or email, and payment is deducted from their campus card accounts.

A Complete, Cloud-Based Solution

GET Food is part of GET™, a cloud-based solution from CBORD that transforms a traditional campus card program into a physical and virtual commerce environment that is convenient, secure, and even fun.



GET provides online and mobile access to campus card accounts, both for account management (GET Funds™) and spending (GET Food).

GET is fully integrated with CS Gold®, Odyssey PCS™, and OdysseyOne™, making it easy to implement and extend purchasing power without complicated interfaces or conversions.

About GET

GET is a cloud-based solution from CBORD that puts the power of your campus card in students' hands anywhere, any time. From account management to spending and more, GET improves student satisfaction, increases campus card usage, and simplifies system management.

Students want online and mobile access to their campus card accounts, both for account management and for spending, without having to juggle multiple apps or bookmarks.

Universities want to offer their students cutting-edge mobile solutions; they want to work with as few providers as possible when dealing with sensitive financial data; and they want to drive revenue by increasing deposits to campus card accounts and increasing sales at campus card-accepting locations.

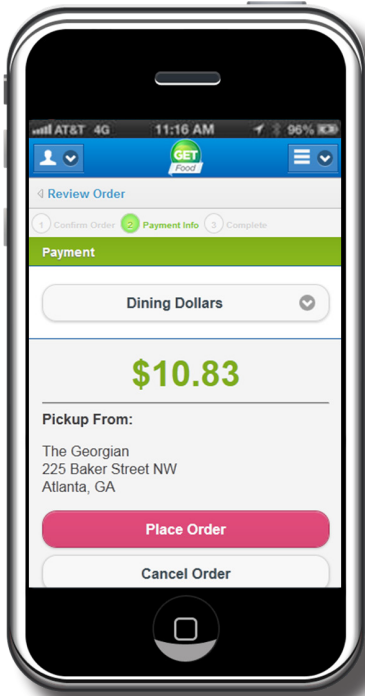
Parents want a simple, secure way to get funds to their students to be spent in a safe, controlled environment under the stewardship of the university.

Merchants want to increase their sales by making it as easy as possible for students to do business with them.

GET provides a unified, easy-to-use solution to meet all of these needs.

Comprehensive Solutions. Innovative Products. Dedicated Service.

The CBORD Group, Inc.
61 Brown Road, Ithaca, NY 14850
607.257.2410 • FAX: 607.257.1902
www.cbord.com



Requirements

Odyssey PCS version 6.0 or higher
CS Gold version 6.0.9 or higher
GET Funds version 1.15 or higher

Comprehensive Solutions

CBORD provides campus card systems, integrated security solutions, housing management, food and nutrition management, catering solutions, and off-campus programs to more than 6,000 organizations. Our focus is on comprehensive solutions that increase revenue, reduce costs, enhance campus safety, improve student satisfaction, and integrate systems seamlessly.

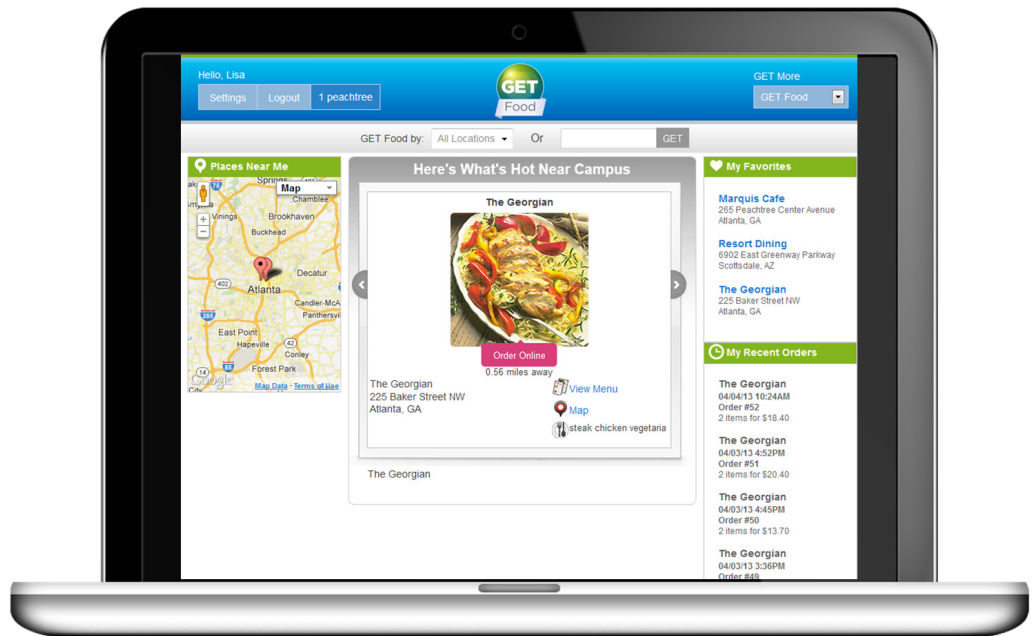
Innovative Products

Our innovation is customer driven. Working in partnership with users, we listen to the industry's evolving needs and develop solutions to keep you a step ahead.

Dedicated Service

The quality of our products is made greater by the caliber of our employees. Through open dialogue with you, our customers, CBORD strives to not only meet, but exceed your expectations; we are committed to providing superior service in all aspects of our customer relationships. You can reach us twenty-four hours a day, seven days a week, and know you have a team dedicated to your satisfaction and success.

CBORD and CS Gold are registered trademarks, and GET Food, GET Funds, GET, Odyssey PCS, and OdysseyOne are trademarks, of The CBORD Group, Inc. All other brand and product names are believed to be trademarks, registered trademarks, or service marks of their respective owners.



cbord®

Comprehensive Solutions. Innovative Products. Dedicated Service.

The CBORD Group, Inc.
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www.cbord.com

MX 925

ELEGANT MULTIMEDIA POWERHOUSE

The MX 925 showcases a stunning 7" WVGA color display, the largest and highest-resolution display in the industry.

A powerful processor, coupled with a graphic processor and generous memory allocation, allows the MX 925 to stream media and visual promotions, driving new revenue opportunities while encouraging customer interaction.



BRILLIANT DISPLAY, ELEGANT DESIGN

- High speed, 32-bit ARM 11 processor and generous memory bring customer messaging and video advertising campaigns to life
- Clean lines and modern, sleek design make a powerful statement – in the lane or on a countertop

FUNCTIONALITY, FLEXIBILITY, SECURITY

- MAXui for a compelling customer interface
- Large, 7" color screen area efficiently accommodates optional signature capture along with scrolling account activity, branding and promotional offers
- State-of-the-art stylus for a clean and sleek look
- Chemically-hardened screen, built for the long haul
- Linux-based OS and application development environment offer maximum flexibility
- NFC/Contactless support to quickly capture new markets as they evolve
- Remotely inject encryption keys anytime, anywhere with VeriShield Remote Key option

THE TOTAL SOLUTION PACKAGE

- Ideal platform for a variety of value-added services, such as administering loyalty schemes, gift card issuance and top-up services
- VeriFone HQ software simplifies device management and reduces overall support costs, all while easily integrating into your current environment – offering device management, diagnostics and content management capabilities
- Web Development Environment (WDE) provides a unique combination of web technology and a secure payment framework for powerful and flexible application development platforms
- Supports end-to-end security with VeriShield Total Protect, secured by RSA, which eliminates sensitive cardholder data from the payment device and merchant infrastructure through tokenization
- Compatible with legacy or existing MX 800 series product solutions

Processor

400 MHz 32 bit ARM 11

Memory

128 MB SDRAM + 256 Flash

Flash is field upgradable via USB or SD memory devices

Connectivity

Connect I/O

Ethernet 10/100BaseT, USB host/device, Serial

Interfaces RS-232, RS 485 IBM Tailgate

WiFi

Compatible with existing MX 800 series cabling solutions

Display

7" WVGA (800 x 480)

65,536 Color, GFX widescreen

Capacitive/chemically-hardened glass

Audio

Full stereo standard on unit

Line out port available to drive externally powered speakers

Smart Card Reader

Landed Reader, up to 3 SAMs, software controllable prompts

Magnetic Card Reader

Triple Track bi-directional

Software-controllable LED prompt

Security/Encryption

PCI PTS 3.0, EMV Level 1 and 2, Triple DES, Master Session, DUKPT, Interac, AES

Secure Browser

Form Agent, IBM EFT, NCR EFT, Secure browser Web Development Environment (WDE)

Operating System

Embedded Linux with VeriFone security enhancements

NFC/Contactless

ISO 14443 AB Certified

MSD/EMV

Completely enabled

Keypad

Recessed for privacy

13 laser-etched tactile keys

Backlit keypad

Stylus

Non-mechanical

Field replaceable

Graphical Processor

Built-in graphical processor



Sierra Wireless AirLink® GX Series

Rugged and mobile 3G/4G gateway

The AirLink® GX Series of mobile gateways delivers high performance, mission-critical cellular communication and GPS location. Its rugged military spec design (MIL-STD 810) and water-resistant aluminum casing (IP-64 rating) enables it to withstand the extreme temperature changes, humidity, shock, and vibration found in mobile applications.

The GX Series is ideal for in-vehicle field deployments such as connecting police cars, fire trucks, ambulances, public transit, taxis, or any other fleet

MODEL	HARDWARE INTERFACES
GX440/400 base	1 Ethernet, 1 RS-232 serial, 1 digital I/O, 1 USB, 2 cellular & 1 GPS antenna connectors
Wi-Fi option	Adds 802.11 b/g/n Wi-Fi hotspot with simultaneous client mode for cellular offloading
I/O option	Adds 4 Digital I/O, 4 analog I/O, and a second RS-232 Serial port
Ethernet option	Adds 2 more Ethernet ports for a total of 3

WI-FI MODEL

Create a Wi-Fi hotspot for communicating with 8 other WLAN equipped devices, including laptops, card readers, fingerprint scanners, and point-of-sale terminals. The Wi-Fi Model will simultaneously switch from communicating over cellular to Wi-Fi when inside the range of a designated access point (ie. depot or service bay) while maintaining connection to the WLAN devices.

I/O MODEL

Use the digital and analog I/O to monitor sensors and control digital relays and switches while using the second serial port to collect data from a programmable logic controller, data logger, or to remotely control serial equipment. The I/O Model enables a wide variety of monitoring applications such as doors, sirens, locks, temperature, humidity, or fluid/gas pressure.

ETHERNET MODEL

Create a three port wireless Ethernet switch to connect any Ethernet enabled device such as a laptop, car reader, IP camera, or dispatch terminal. The Ethernet model provides both gateway and switch capabilities eliminating the need for additional hardware.



Wi-Fi Model



I/O Model



Ethernet Model



Base Model

AIRLINK GX SERIES BENEFITS

- Intelligence that makes them quick to deploy and simple to manage
- Reliable connectivity that ensures they stay connected to the network
- Rugged design that lasts for years in the harshest environments
- Application framework that makes them easy to program
- Integration with AirVantage® M2M Cloud for building innovative applications and services
- 5-year warranty

AirLink® GX Series

Technical Specifications

4G LTE GX440 MODELS

- 700MHz Band 13 LTE
Sierra Wireless MC7750 Radio Module
fallback to 800/1900 MHz EV-DO
- 700MHz Band 17 AWS LTE
Sierra Wireless MC7700 Radio Module
fallback to 850/1900/2100 MHz HSPA+

Peak LTE data rates

- Download: 100Mbps
- Upload: 60Mbps

3G GX400 MODELS

- Rev. A 800/1900 MHz EV-DO
Sierra Wireless MC5728 Radio Module
fallback to CDMA 1xRTT
 - o Peak download data rate: 3.1Mbps
 - o Peak upload data rate: 1.8Mbps
- 850/900/1900/2100 MHz HSPA+
Sierra Wireless MC8705 Radio Module
fallback to GSM/GPRS/EDGE
 - o Peak download data rate: 21.1Mbps
 - o Peak upload data rate: 5.76Mbps

CARRIER APPROVALS

Approved for deployment by Verizon, AT&T, Sprint, Rogers, Bell, Telus, Telstra

HOST INTERFACES

- 10/100 Base-T RJ45 Ethernet
(Ethernet model x3)
- RS-232 serial port
(I/O model x2)
- USB V2.0 Micro-B connector
- 3 SMA antenna connectors
(Primary, Secondary/Diversity, GPS)
- Active antenna support

INPUT/OUTPUT

Configurable I/O pin on power connector

- Digital Input ON Voltage: 3.3 to 30 VDC
- Digital Input OFF Voltage: 0 to 1.2 VDC
- Analog Input Voltage 0 to 30 VDC
- Open collector output > 200mA @ 30VDC

I/O Model only

- 5 configurable digital I/O
- 4 configurable analog I/O
(Input Voltage 0 to 30 VDC)

WI-FI MDOEL

- IEEE 802.11b/g/n
 - o Adjustable output power
(Max:15dBm)
 - o Hotspot access point for up to 8 clients (simultaneous hotspot/client with WEP, WPA2 security)
- SMA-RP antenna connector

GPS TECHNOLOGY

- 4G LTE GX440 Models
 - o Acquisition Time: 2 Sec Hot Start
 - o Accuracy: <2m (50%), <5m (90%)
 - o Tracking Sensitivity: -161 dBm
- 3G GX400 Models
 - o Acquisition Time: 9 sec Hot Start
 - o Accuracy: <3m (50%), <8m (90%)
 - o Tracking Sensitivity: -152 dBm

PROTOCOLS

- Network: TCP/IP, UDP/IP, DNS
- Routing: NAT, Host Port Routing, DHCP, PPPoE, VLAN, VRRP, Reliable Static Route
- Application: SMS, Telnet/SSH, Reverse Telnet, SMTP, SNMP, SNTp
- Serial: TCP/UDP PAD Mode, Modbus (ASCII, RTU, Variable), PPP
- GPS: NMEA 0183 V3.0, TAIP, RAP

EVENTS REPORTING

- Event Types: Digital Input, GPS/AVL, Network Parameters, Data Usage, Timer, Power, Device Temperature
- Report Types: SMS, Email, SNMP Trap, Relay Output, GPS Rap Report, Events Protocol Message to Server

VPN/SECURITY

- IPsec, SSL, and GRE VPN Client
- Up to 5 VPN Tunnels
- IKE Encryption
- Port Forwarding and DMZ
- Port Filtering
- Trusted IP
- MAC Address Filtering

DEVICE MANAGEMENT

- AirVantage Management Service cloud-based device management application
- ACEManager™ device configuration utility

DIMENSIONS

- 5.6 in x 3.8 in x 1.6 in
(142 mm x 98 mm x 40 mm)
- 14 oz (397G)

POWER

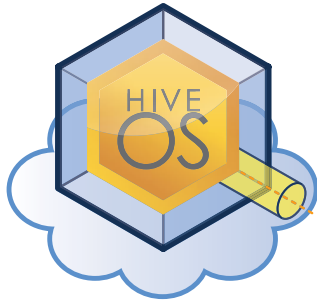
- Analog Ignition Sense & Power Management
- Input Voltage: 9 to 36 VDC

ENVIRONMENTAL

- Operating Temperature: -30°C to +70°C / -22°F to +158°F
- Storage Temperature: -40°C to +85°C / -40°F to +185°F
- Humidity: 90% RH @ 60 °C
- Military Spec MIL-STD-810 conformance to thermal, mechanical shock and humidity
- IP 64 rated

INDUSTRY CERTIFICATIONS

PTCRB, R&TTE, FCC, Industry Canada, CE, E-Mark, RoHS Compliant, Class 1 Div 2 certified.



The **Aerohive Cloud VPN Gateway (CVG)** is a VPN Gateway solution designed to integrate into virtualized environments and simplify complex VPN deployments.

Cloud VPN Gateway

Cloud-enabled VPN Tunnel Termination

Aerohive's Cloud VPN Gateway (CVG) is designed to simplify VPN termination for thousands of remote branch offices in an innovative, new way. The heart of the CVG is a lightweight, software-based solution for VMware-compliant equipment; the soul of the CVG is an enterprise-class VPN concentrator terminating thousands of VPN tunnels from remote access locations.

These unique characteristics, combined with HiveOS Routing intelligence, create breakthrough ease of branch office provisioning and management with the license-free pricing that's made Aerohive the networking partner of choice for thousands of organizations around the world.

Key Features and Benefits

Dynamic Routing Integration

The Aerohive CVG can integrate with standards-based dynamic routing protocols such as Open Shortest Path First (OSPF) and Routing Information Protocol version 2 (RIPv2) to collect routing information from corporate routers and distribute the necessary information to the Aerohive Branch Routers. Similarly, the CVG can also collect routing information from branch router devices and advertise it to surrounding corporate devices to provide paths to the remote networks. Dynamic routing capabilities allow efficient use of WAN resources, reduce traffic congestion, and enhance remote site survivability.

Scalable, License-Free VPN Tunnel Termination

The Aerohive Cloud VPN Gateway delivers the best of both worlds—enterprise-class VPN scalability in a low-cost, lightweight software package. With the CVG, what used to be a big-iron investment is now a simple software download with one-click install. No more over-buying capacity and licenses for future tunnel capacity requirements—just add more computing power to the virtual instance and it's ready to terminate more license-free tunnels. Whether the deployment requires terminating five tunnels or 5,000, the CVG is up to the task and ready without any per-tunnel or client licensing fees.

For more information visit www.aerohive.com/products.

Warranty and Support

Every Aerohive Networks device is backed by a limited lifetime hardware warranty. Extended product and technical support may be purchased separately and can include next day advanced replacement, 24x7 or 8x5 technical support, web and email support access, and software updates. For complete support terms go to www.aerohive.com/support.

Contact us today to learn how your organization can benefit from Aerohive networking solutions.

Cloud VPN Gateway Recommended Hardware Configurations

	500 Tunnels	1000 Tunnels
CPU	2.4GHz dual-core	3.1GHz quad-core
Memory	2+ GB (512 MB for VM)	4+ GB (1024 MB for VM)
Ethernet NICs	1 or 2	2
VMware Version	ESXi 4.1 or later	ESXi 4.1 or later
Hard Disk Size	10+ GB (256 MB for VM)	10+ GB (256 MB for VM)

Aerohive Networks, Inc.

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Sunnyvale, California 94089 USA
phone 408.510.6100
toll-free 866.918.9918
fax 408.510.6199

www.aerohive.com

Product Specifications

Dynamic Routing

- OSPF
- RIPv2
- Cooperative Control route distribution for connected Aerohive branch routers

Layer 3 IPsec VPN

- Remote office IPsec-based VPN solution
- Profile-based split tunneling with NAT support
- Redundant tunnel support

Static Routing

- Static route support for corporate-connected resources
- Cooperative Control route distribution for connected Aerohive branch routers

VPN Reporting

- Provides connectivity and latency reports to HiveManager
- Tracks throughput and connectivity of connected Aerohive branch routers and sends this information to HiveManager

Management

- Central Management
 - via HiveManager
 - via HiveManager Online
- Device Configuration
 - CLI via Telnet, SSHv2, or console
- Monitoring
 - SNMP v1, v2c, and syslog

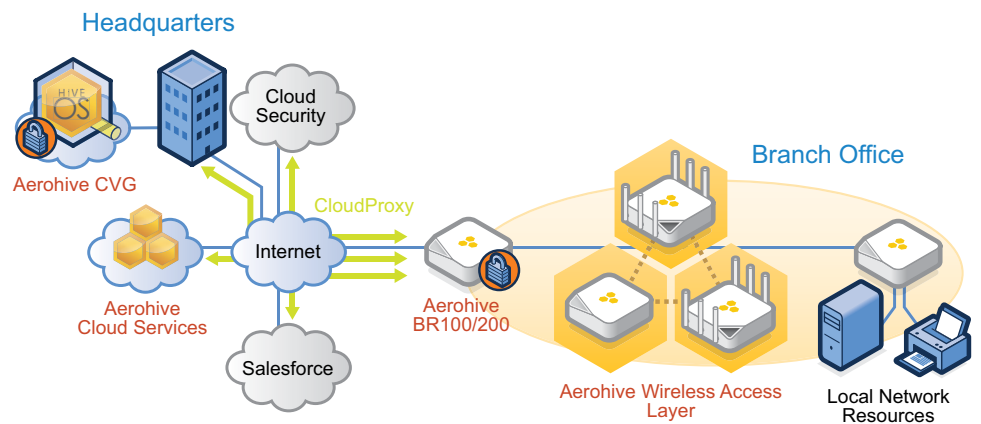
Introducing Branch on Demand

Aerohive's Branch on Demand™ is a cloud-enabled networking solution for remote locations that simplifies provisioning, management, security, and troubleshooting for remote deployments. The solution enables enterprises to provision branch office networks and teleworkers instantly, on-demand, with the robust Layer 2-7 corporate policy enforcement, enterprise class network visibility and remote remediation capabilities previously only available in complex, large branch solutions. This breakthrough teleworker and branch office networking solution enables all these advanced networking features across hundreds or thousands of branches and teleworkers with straight-to-site delivery and instant, on-demand provisioning starting at \$99 per year per office.

The heart of the Branch on Demand solution is the new BR branch router platforms. Based on our robust HiveOS operating system, the BR routers require virtually no intervention from the end user at all. They simply plug the compact branch router in, and the device will leverage Aerohive's Cloud Services Platform to do the rest. The branch router will automatically find its

HiveManager, whether it is located in the cloud or on premises, download the corporate wired and wireless security policies, establish its VPN connection, and the office is up and running in minutes. No need to pre-provision the hardware, download client software onto each user device, or train users on VPN use.

Operation is almost this simple from the administrator's point of view as well. Admins simply set up the configuration and provide the parameters for branch routers to acquire the config. Unified wired and wireless policies make it particularly easy to configure an entire network solution for all types of connected clients. Then, when a device comes online, HiveManager will automatically push the configuration to the device. HiveManager is completely out-of-band, so a WAN disturbance does not affect the branch network or the Aerohive WLAN at all. And because HiveManager provides a single centralized interface to configure and manage both Aerohive access points and branch office devices, managing a thousand devices is literally as easy as managing one.



SKU	Description
Aerohive Cloud VPN Gateway	
AH-CVG-HM-BUNDLE	A bundle including 1 Cloud VPN Gateway AND associated perpetual license to enable CVG on a virtual or on-premise HiveManager
AH-CVG-8x5-1YR-HMOL-BUNDLE	A bundle including 1 Cloud VPN Gateway AND HiveManager Online for 1 year, includes 8x5 Phone support, software subscription, and customer portal access.
AH-CVG-8x5-3YR-HMOL-BUNDLE	A bundle including 1 Cloud VPN Gateway AND HiveManager Online for 3 year, includes 8x5 Phone support, software subscription, and customer portal access.
AH-CVG-8x5-5YR-HMOL-BUNDLE	A bundle including 1 Cloud VPN Gateway AND HiveManager Online for 5 year, includes 8x5 Phone support, software subscription, and customer portal access.
AH-CVG-24x7-1YR-HMOL-BUNDLE	A bundle including 1 Cloud VPN Gateway AND HiveManager Online for 3 year, includes 24x7 Phone support, software subscription, and customer portal access.
AH-CVG-24x7-3YR-HMOL-BUNDLE	A bundle including 1 Cloud VPN Gateway AND HiveManager Online for 3 year, includes 24x7 Phone support, software subscription, and customer portal access.
AH-CVG-24x7-5YR-HMOL-BUNDLE	A bundle including 1 Cloud VPN Gateway AND HiveManager Online for 5 year, includes 24x7 Phone support, software subscription, and customer portal access.

BR200 Router

Branch Router with gigabit Ethernet, optional PoE and 3x3:3 802.11n



The **Aerohive BR200** Router series streamlines branch office deployments with compact, cloud-enabled routers that are engineered for enterprises that are big on security and performance.

By combining secure routing and enterprise-class Wi-Fi in a single platform, the BR200 platforms provide essential networking and management capabilities to connect, secure, and manage branch offices. With the deep, feature-rich HiveOS Routing at its core, IPsec VPN, user-based access control, fully stateful firewall policies, and additional security and RF networking features are all included without the need for a centralized or dedicated controller. Combining these award-winning capabilities with cloud-based services provides the BR200 the unique flexibility and ease of use to drastically reduce time-to-operation of large-scale branch rollouts.

The BR200 series comes in two models: the BR200 and the BR200-WP. The BR200 provides LAN connectivity along with the feature-rich capabilities of HiveOS routing, including RADIUS server/proxy, secure wired access, and cloud-based management. The BR200-WP includes all of that as well as PoE (Power over Ethernet) and 3x3 3 spatial stream 802.11a/b/g/n Aerohive enterprise Wi-Fi.

Key Features and Benefits

Flexible and Reliable Connectivity

The Aerohive Layer 3 IPsec VPN solution connects remote offices easily and securely to corporate resources. With built-in identity-based access control, network-based mobile device management, and simplified client health statistics, the BR200 can make edge-based forwarding decisions based on identity and device type, securing access to the corporate LAN while providing connectivity with management and visibility for any remote office deployment.

Enterprise Class Wi-Fi Security

The BR200-WP supports integrated spectrum analysis and WIPS with no additional licensing fees. This gives a centralized administrator the ability to see any potential Wi-Fi interference or help do expansion planning, and ensures the access available at the branch locations remains secure and compliant with applicable standards. The BR200 devices also support the full Aerohive HiveOS enterprise suite, including Private Pre-Shared Key Self Registration and Active Directory integration for authentication offload and resiliency at branch locations.

Simple and Secure Unified Network Management

The BR200-WP includes 5 Gigabit Ethernet switch ports, a single 802.11n radio, a USB port for 3G/4G WAN backup, and is powered using an AC power adaptor. It also includes up to 2 Power over Ethernet (PoE) ports to extend power to any devices requiring 15.4 watts or less to operate. Since HiveManager can manage the devices from the cloud, a central administrator can control port, power, and wireless access remotely regardless of where the BR200s are physically located. Aerohive branch routers are easily provisioned and configured from HiveManager without any pre-staging required, and HiveManager Auto-Provisioning removes the complexity of scheduling installations and configuration by allowing an administrator to specify what configuration options the device should get once it connects securely to HiveManager. The configuration can be protected by a one-time-password provided to the user which is validated before any configuration is downloaded to the device.

Infinitely Expandable

The BR200 series easily combines with Aerohive Access Points to create a scalable and easily-managed branch office solution. Aerohive APs can be connected to the BR200 via Ethernet or by using the integrated, automatic wireless mesh functionality in HiveOS. A single unified policy dictates how and when users can connect via Ethernet or wireless – ensuring security regardless of how or where they connect.



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Product Specifications

Mounting

- Desktop
- Keyhole Wall Mounts

Wi-Fi

- Single Radio 3x3 3-stream 802.11a/b/g/n (BR200-WP only)
- Modulation
 - BPSK, QPSK, 16QAM, 64QAM, DQPSK and CCK
- Encryption
 - WEP, AES and TKIP
- Antennas
 - 3 embedded antennas with diversity function

Interfaces

- IEEE 802.3ab(1000BASE-T), 802.3u(100BASE-TX), 802.3(10BASE-T) compliant
 - 5 x 10/100/1000Mbps Hlaf/Full duplex Ethernet Ports
 - » 2 ports capable of IEEE 802.3af standards based PoE up to 15.4W (BR200-WP only)
- 1 Type-A USB2.0 port backward compatible with USB1.1
- 1 Reset button to reset (on press) and load factory default settings (when pressed for more than 5 seconds)
- 1 RJ45 console port

Modem Support

- US/NAM Modules
 - Sierra Wireless 313U
 - Sierra Wireless 308U
 - Pantech UML 290
 - Novatel 551L
- International Modems
 - Sierra Wireless 310U
 - Sierra Wireless 312U
 - Sierra Wireless 319U
 - Sierra Wireless 320U
 - Sierra Wireless 326U
 - Huawei E220
 - Huawei E1752
 - Huawei UM366
- Additional modems on roadmap*

Environmental

- Operating: 0 to +40 degrees C
- Storage: -20 to +70 degrees C
- Humidity: 5% to 95% RH (non-condensing)

MTBF (based on Telecordia SR-332)

- BR200: 571,000 Hours at 25 degrees C
- BR200-WP: 392,000 Hours at 25 degrees C

Power

- DC 48V/1.25A, 60W

Physical Security

- 1 Kensington Lock Connector

Other Features

- Full Trusted Computing Group (TCG) Trusted Platform Module (TPM)
- Dedicated Hardware-accelerated SHA-1 Engine

Firewall/VPN

- 75Mbps

Features & Benefits

Cooperative Control Software

- Supports HiveOS 5.0r2 and later releases
- Automatic Mesh with Aerohive APs
- User identity and device type (network MDM controlled access to networks)

Flexible Hardware Platform

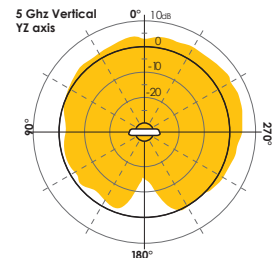
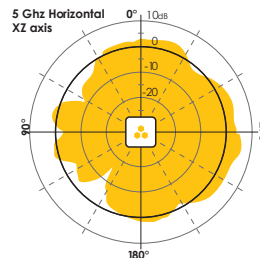
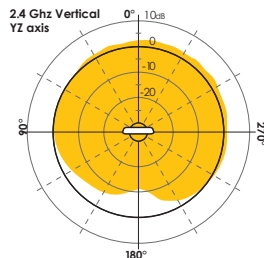
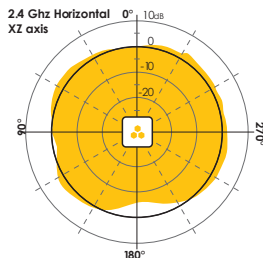
- Single 802.11a/b/g/n radio

Security

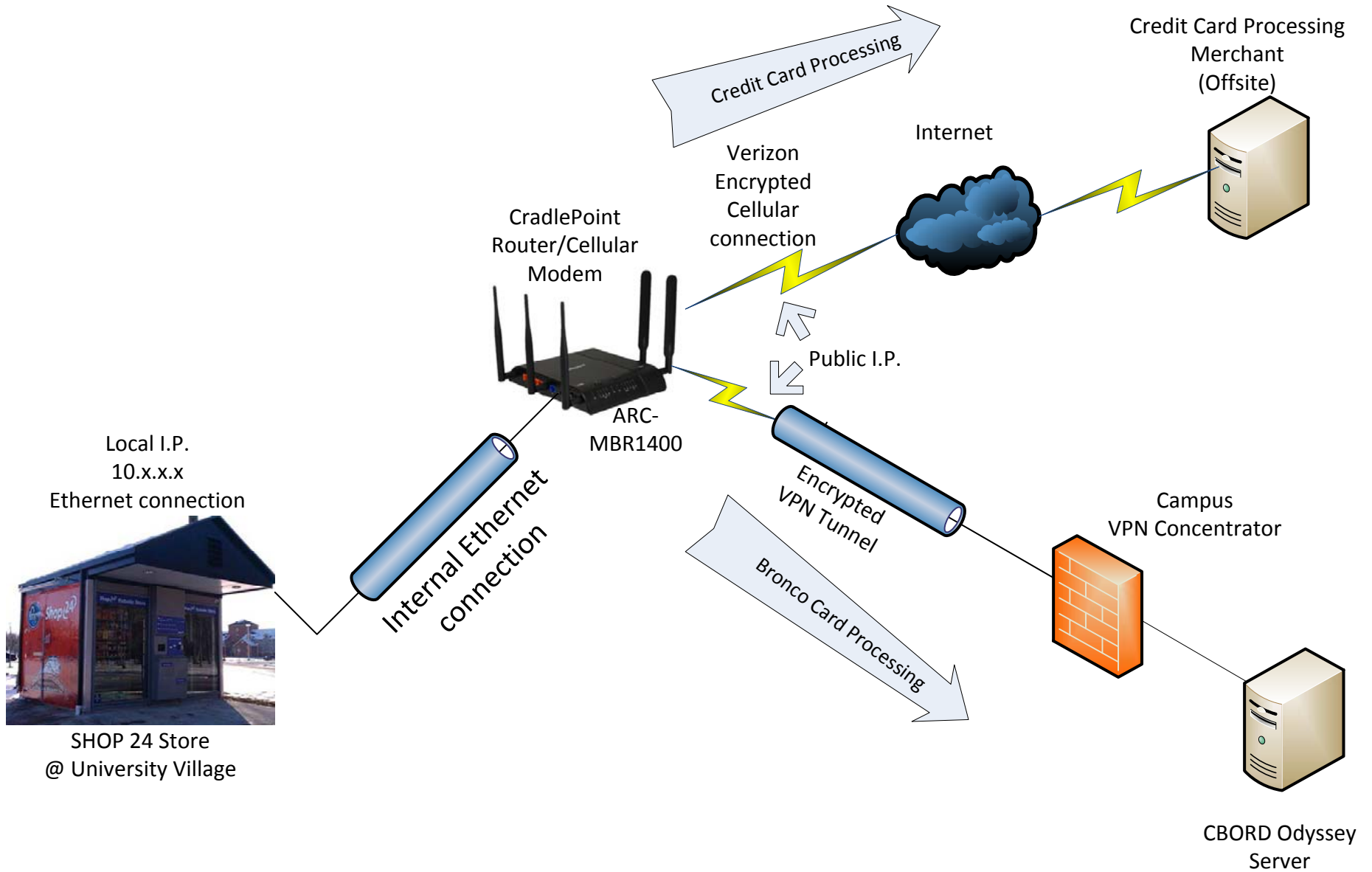
- Wireless privacy & authentication Wi-Fi CERTIFIED™ WPA™ and WPA2™, 802.11i, WEP, 802.1x, PSK, PPSK
- Granular user profile-based management defines QoS, mobility policies, and security policies for each user and device type that enters the network
- Wired authentication including 802.1X, MAC authentication, and Captive Web Portal support

- Encryption: AES:CCMP, TKIP, and RC4 (WEP only)
- Marking and policing-WMM™ (802.11e) for wireless, 802.1p and/or DiffServ
- Priority queuing for Voice packets on wired interfaces
- Wi-Fi CERTIFIED WMM
- WMM power save (U-APSD)
- Device registration codes for secure, zero-touch auto-configuration
- Dual WAN Redundancy (USB and Ethernet)
- Policy-based Route load balancing with active-active WAN support
- Wireless Intrusion Prevention System scanning on both bands including DFS channels
- Application Visibility for nearly 1000 widely-used applications

Features	Platforms		
General	BR100	BR200	BR200-WP
Recommended Users	1 to 10	1 to 50	10 to 50
FW/VPN Mbps	5-10 Mbps	75Mbps	75Mbps
Radio	1 1x1 11bgn	None	1 3x3:3 11abgn
Interfaces	5x 10/100	5x 10/100/1000	5x 10/100/1000
Managed PoE	None	None	2 PoE PSE
SNMP	None	Yes	Yes
USB WAN as Primary	Yes	Yes	Yes
SSIDs	4	0	16
Networks	4	16	16
User Profiles	32	64	64
Wi-Fi			
Wi-Fi Client Max Mbps	135Mbps	N/A	450Mbps
Spectrum Analysis	No	N/A	Yes
Wi-Fi as WAN	No	N/A	Yes
WIPS	Basic Rogue	N/A	Yes
WPA2-PSK	Yes	N/A	Yes
WPA2-802.1X	Yes	Wired Only	Yes
PPSK SSID Support	Yes	N/A	Yes
Security and Management			
RADIUS Server/Proxy	external only	Yes	Yes
AD Integration	external only	Yes	Yes
PPSK Server	Yes	No	Yes
Cloud Proxy	Yes	Yes	Yes
Voice			
Voice QoS	Yes	Yes	Yes
Access Port Based Voice	Yes	Yes	Yes
Trunk Port Based Voice	No	Yes	Yes



SKU	Description
Aerohive Branch Router	
AH-BR-200WP-N-FCC	BR200WP, 5xGigabit LAN/WAN, 2 PoE PSE Ports, Dual band 3x3:3 Single 802.11a/b/g/n radio, USB for 3G/4G, FCC regulatory domain, with US power supply
AH-BR-200WP-N-W	BR200-WP, 5xGigabit LAN/WAN, 2 PoE PSE Ports, Dual band 3x3:3 Single 802.11a/b/g/n radio, USB for 3G/4G, configurable regulatory domain, with power supply
AH-BR-200	BR200, 5xGigabit LAN/WAN, USB for 3G/4G with power supply (Global SKU)
BR Accessories	
AH-ACC-PWR-60W-US	60W power supply and US power plug for BR200 series
AH-ACC-PWR-60W-EU	60W power supply and EU power plug for BR200 series
AH-ACC-PWR-60W-UK	60W power supply and UK power plug for BR200 series
AH-ACC-PWR-60W-AU	60W power supply and AU power plug for BR200 series



FILENAME	
SHOP24 NETWORK DIAGRAM.VSD	
DATE	DRAWN BY
10/21/2013	Foundation M.I.S. DEREK DAVIS

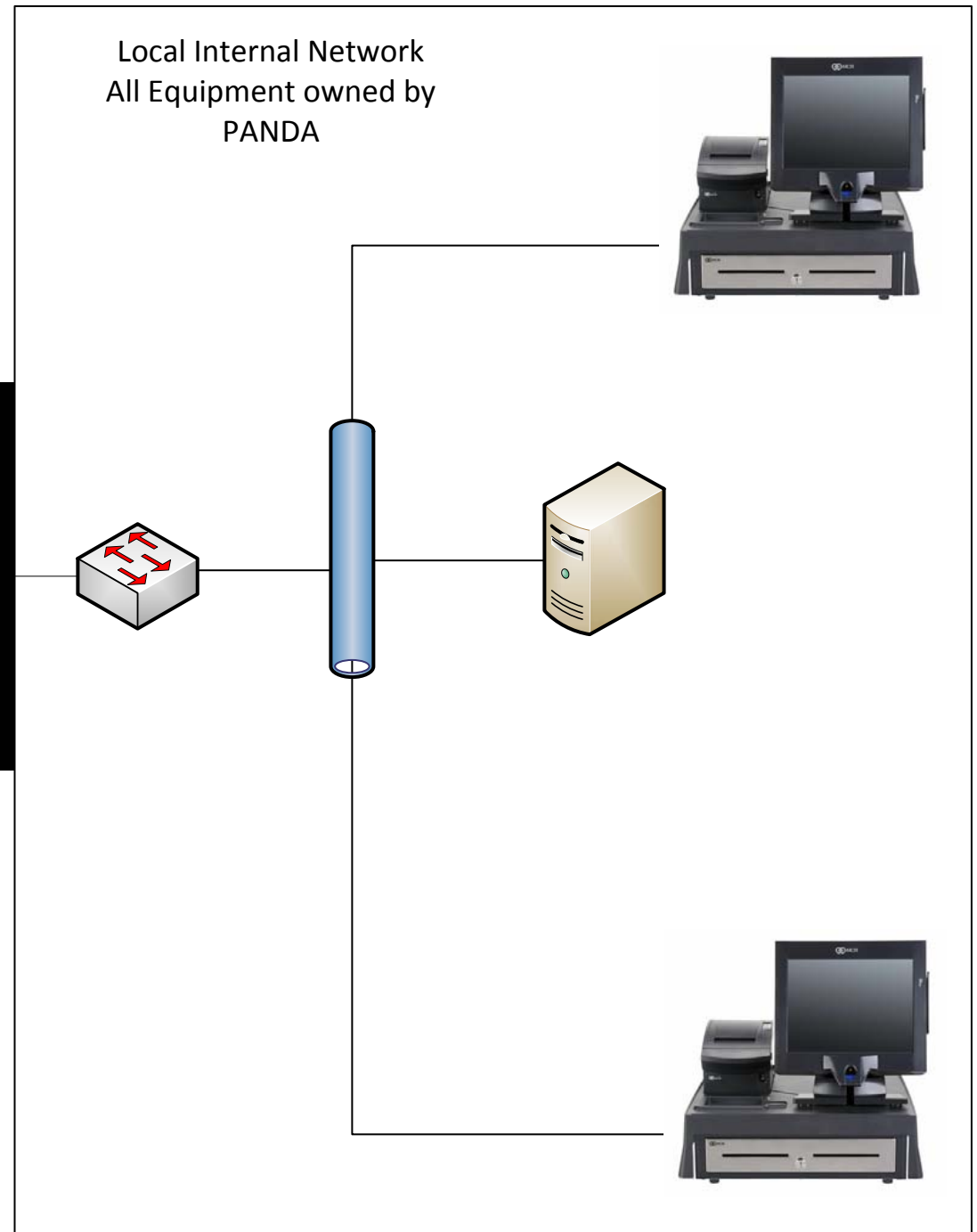


Outdoor Omni-Directional Ant.

POE connection



CradlePoint ARC
CBA750B w/
integrated modem





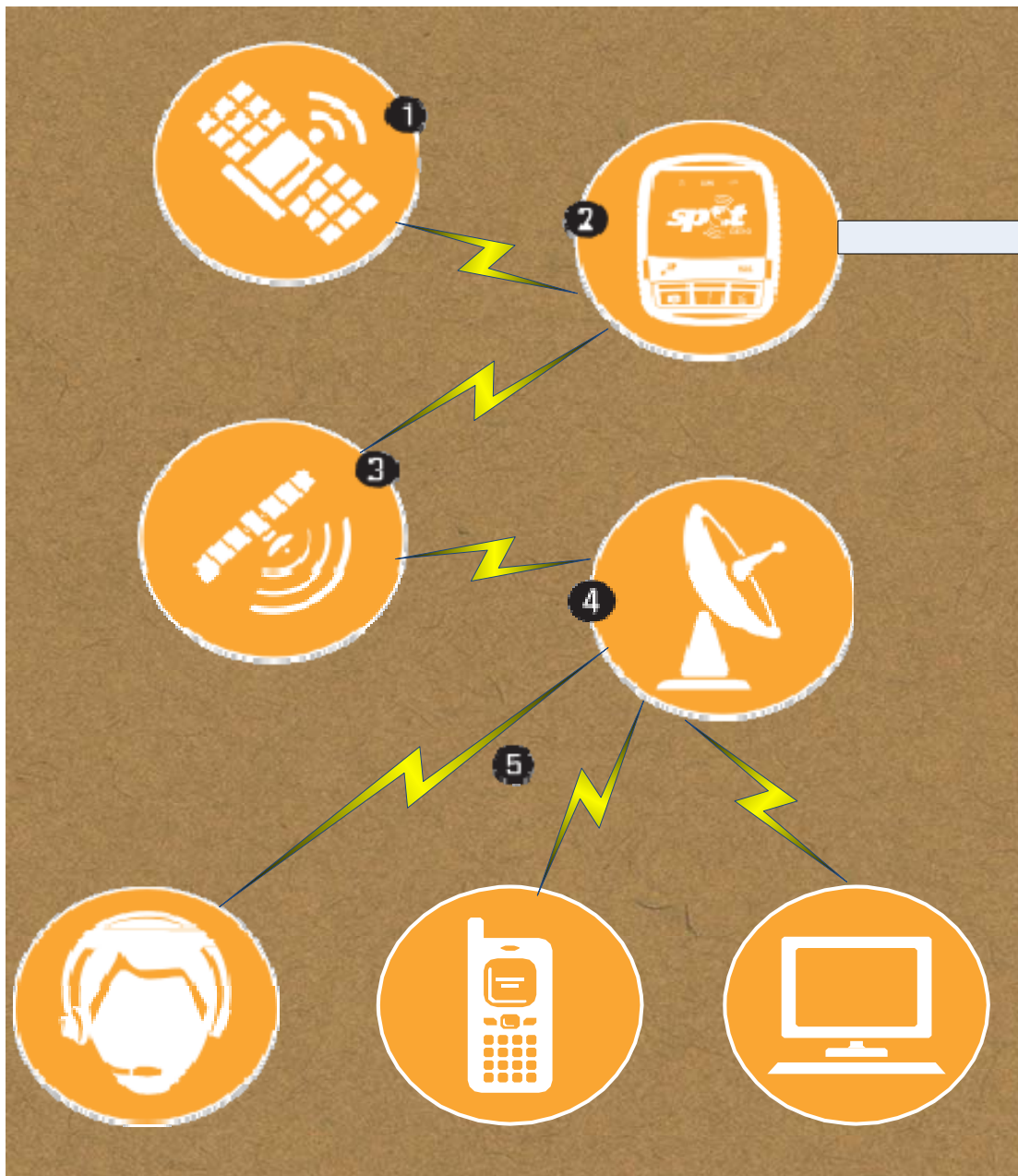
GPS



S.O.S.



✓
OK



<http://www.polytrolley.com/locate/>



How SPOT Works

1. GPS satellites provide signal
2. SPOT determines your GPS location and sends your location and pre-programmed message to communication satellites
3. Communication satellite relay your message to specific satellite antennas around the world.
4. Satellite antennas and a global network route your location and message to the appropriate network
5. Your location and messages are delivered according to your instructions via email, text message, or emergency center

Through the use of Google Maps when SPOT sends a message it includes GPS coordinates and a web link to view your location

CradlePoint ARC MBR1400 Series

INTEGRATED MOBILE BROADBAND ROUTER

Wireless WAN connectivity for distributed business locations



Keep your business network online with high-speed wireless broadband

WIRELESS WAN CONNECTIVITY

CradlePoint ARC MBR1400 Series routers enable easy-to-install wireless connectivity in fixed-business locations. Ideal for distributed enterprises such as branch offices, retail POS locations, restaurants, and small businesses, the MBR1400 provides wired Ethernet and 3G/4G wireless WAN connectivity to keep your business up and running.

BUSINESS CONTINUITY

As businesses increasingly depend on cloud computing and remote applications, reliable Internet connectivity becomes mission-critical for business success. CradlePoint's integrated business series routers combine the power and flexibility of our flagship router with an embedded business-grade wireless WAN modem for a fully-integrated business continuity solution.

ENTERPRISE PERFORMANCE

The ARC MBR1400 Series routers offer the latest in high-speed 3G/4G wireless connectivity to deliver the continuous uptime and bandwidth needed to support growth in cloud computing and ensure against loss of productivity and business opportunity.

The MBR1400 now supports these enterprise routing protocols: BGP, OSPF, and RIP; VRRP for router redundancy; and STP.

FLEXIBLE

- Use the integrated 3G/4G wireless modem as the primary connection or as failover from a wired connection.
- Create secondary networks to simplify PCI compliance, video surveillance, digital signs, kiosks, etc.
- Load balance across multiple wired and wireless connections when additional bandwidth is required.

*BGP, OSPF, RIP, VRRP, and STP require hardware version 2.0.

SECURE AND RELIABLE

- LAN connections are protected with advanced WiFi encryption, LAN Segmentation, and VLAN capabilities.
- Main office access and POS transactions are protected by VPN capability and other security features to ensure your network stays secure.
- Designed for PCI compliant network architectures.
- Engineered for day-in, day-out 24/7 Internet connectivity, CradlePoint integrated business series routers ensure reliable connections when you need them.

WIPIPE CENTRAL: CLOUD-ENABLED MANAGEMENT

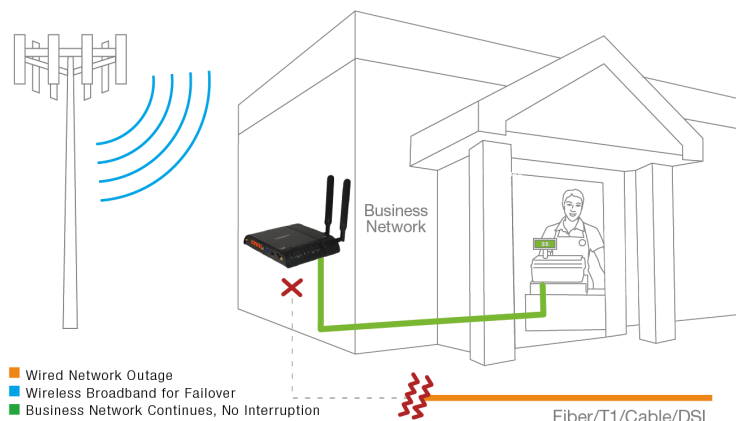
Rapidly deploy and dynamically manage networks at geographically distributed stores and branch locations with WiPipe Central, a cloud-enabled application and security platform. WiPipe Central integrates cloud management with your CradlePoint devices to improve productivity, increase reliability, reduce costs, and enhance the intelligence of your network and business operations.

Subscription required. See cradlepoint.com/wipipe for details.

CRADLECARE SERVICES

The MBR1400 comes with a standard 1 year warranty. For extended warranties and other enhanced services including enterprise-level support, site surveys, and expert installation, check out CradlePoint's CradleCare suite of services.

Subscription required. See cradlepoint.com/cradlecare for details.



www.cradlepoint.com/ARCMBR1400

ARC MBR1400 Integrated Mobile Broadband Router

Key Features and Benefits

Internet Access and Device Connectivity

Integrated high-speed 3G/4G modem – see attached specifications

5 Ethernet 10/100/1000 LAN/WAN ports for Ethernet-enabled devices or landline Internet

Wireless LAN – WiFi (802.11 a/b/g/n) supports up to 128 connections at a time

Business Continuity: Failover/Failback

Automatic failover to wireless WAN connection when wired WAN disruption occurs, automatic failback when wired WAN connection is restored

Load balancing across multiple wired and wireless WANs for more bandwidth

Proactive alerts when failover occurs through WiPipe Central™

VRRP for enterprise router redundancy (hardware version 2.0 only)

Flexibility

First-time and advanced setup wizards for easy, swift, and secure setup

One-page dashboard to view router status and configuration

Remote management with WiPipe Central™, SNMP v1/2c/3, and CLI over SSH

Four SSIDs, with individual security and QoS settings, to separate critical traffic or create a public WiFi hotspot with a captive portal (terms of service, ads, etc.)

“WiFi as WAN” mode enables use as a WiFi repeater, WiFi Bridge, or as a Wi-Fi-to-Ethernet adapter for Ethernet-enabled devices

Multiple Ethernet ports can be configured to “WAN Mode” to provide wireless and wired failover and load balancing

Data usage management and alerts to monitor data usage and avoid overages

LAN/WAN Affinity to assign specific LAN traffic to a WAN

Serial console available for out-of-band management of another device (with USB-to-serial cable)

Enterprise routing protocols: BGP, OSPF, RIP (hardware version 2.0 only)

Advanced diagnostics tools including: tcpdump, netfilter, traceroute

Security

IPsec VPN (up to 20 concurrent sessions) with GRE Tunneling option, also supports passthrough VPN connections (IPsec, L2TP, PPTP)

WEP, WPA, WPA2, and AES encryption for secure WiFi

SPI (stateful packet inspection) firewall and NAT (network address translation) to prevent unwanted access to connected computers

Advanced security mode and reporting to facilitate PCI-DSS compliance

Variety of security features (URL filtering, IP & traffic filtering, DMZ, port forwarding) for safer Internet access

802.1Q VLAN support to isolate, segment, and secure your network

Service, Support, and Warranty

CradleCare Premier 1, 2, and 3 year Enterprise Support Agreements available with 24/7 technical support, software upgrades, and advanced hardware exchange

Limited 1 year warranty included, access to software updates and hardware repair or replacement – 2 and 3 year warranty extensions available

CradleCare Site Survey and Installation services offered for rapid deployment

Specifications

WAN Wireless WAN modem; 10/100/1000 Ethernet ports (cable/DSL/T1/satellite modems), WiFi (as WAN) 3x3 MIMO “N” 2.4 GHz or 5 GHz (802.11 a/b/g/n)

LAN WiFi (802.11 a/b/g/n), five 10/100/1000 Ethernet ports (WAN/LAN switchable), serial console support w/ USB-to-serial adapter

TEMPERATURE 0°C to 40°C (32°F to 104°F) operating
-20°C to 70°C (-4°F to 158°F) storage

RELATIVE HUMIDITY (non-condensing) 10% to 85%, operating
5% to 90%, storage

SIZE 9x5.1x1.6 in (230x130x40 mm) or 9x7.25x1.6 in (230x185x40 mm)

CERTIFICATIONS FCC, WiFi Alliance, CE, IC, carrier certifications

WIFI POWER Transmit power: 25 dBm typ for all modes; receive sensitivity: -69 dBm typ (11n), -72 dBm typ (11g), -84 dBm typ (11b)

What's In The Box

ARC MBR1400 with integrated business-class wireless WAN modem

External 3G or 4G mobile broadband modem antennas (2) (SMA) w/ multiplexing for GPS (on some models), finger tighten only

External high-gain WiFi antennas (3) reverse SMA (2 dBi, 2.4 GHz), finger tighten only

12V / 1.5A power supply

Quick Start Guide with warranty information

Requirements

Internet Service Active mobile broadband plan with cellular provider or Ethernet-based Internet connection (DSL, Cable, T1)

Browser (to configure router) Minimum of Firefox v2.0, Internet Explorer v7.0, Chrome, or Safari v1.0

Router Details

WAN Security NAT, SPI, ALG, inbound filtering of IP addresses, port blocking, service filtering (FTP, SMTP, HTTP, RPL, SNMP, DNS, ICMP, NNTP, POP3, SSH), protocol filtering, WAN ping (allow/ignore)

Redundancy and Load Balancing Failover/failback with 4G, 3G, Ethernet with rule selection, advanced load balancing options (round robin, spillover, data usage, rate), WAN failure detection, VRRP*

Intelligent Routing UPnP, DMZ, virtual server/port forwarding, routing rules, NAT-less routing, wired or wireless WAN-to-LAN IP passthrough, route management, per-interface routing, content filtering, IP filtering, website filtering, per-client Web filtering, local DHCP server, DHCP client, DHCP relay, DNS, DNS proxy; ALGs: PPTP, L2TP, PPPoE passthrough, IPsec passthrough, FTP (passive), FTP (active), SIP, TFTP, IRC, MAC address filtering, Dynamic DNS, LAN/WAN affinity, VLAN support (802.1Q), STP,* enterprise routing protocols:* BGP/OSPF/RIP, multicast proxy support,* IP setting overrides

Management WiPipe Central™ cloud-enabled management and application platform (subscription-based); web-based GUI (local management), optional RADIUS or TACACS+ username/password; remote WAN web-based management w/ access control (HTTP, HTTPS); SNMP v1, v2c, & v3; CLI over SSH, SSH to serial, SSH to telnet; API; one-button firmware upgrade; modem configuration, update, and management; modem data usage w/ alerts, per-client data usage; custom AT scripting to modems

Performance & Health Monitoring WiPipe™ advanced QoS with traffic shaping, with DSCP/DiffServe QoS, Modem Health Management (MHM) improves connectivity of modem, SSID-based priority, WAN port speed control, several levels of basic and advanced logging for troubleshooting

VPN (IPsec) Tunnel, NAT-T, and transport modes; connect to Cisco/Linksys, CheckPoint, Watchguard, Juniper, SonicWall, Adtran and others; certificate support; Hash (MD5, SHA128, SHA256, SHA384, SHA512), Cipher (AES, 3DES, DES); support for 20 concurrent connections, GRE tunneling, multiple networks supported in a single tunnel, site-to-site dynamic VPN with NHRP*

GPS Standalone GPS supported on most models (see attached); GUI mapping as well as local (LAN) or remote (WAN) server logging

*Requires hardware version 2.0

cradlepoint

One-year limited hardware warranty only available in the US and Canada. Product specifications are subject to change without notice. This product requires either an active subscription from a wireless service provider or Ethernet-based broadband service from an Internet service provider to receive Internet service. Check with your broadband provider for service coverage, fees, and other charges. © 2013 CradlePoint, Inc. All rights reserved. CradlePoint, WiPipe™, and the WiPipe logo are trademarks of CradlePoint, Inc. in the US and other countries. Other trademarks are the property of their respective owners.

Ordering information

ARC MBR1400 Integrated Business Series Routers	
ARC MBR1400LE-VZ	Business series router with dual-mode, high-performance 4G LTE / EVDO wireless WAN connection for the Verizon network (802.11 a/b/g/n WiFi)
ARC MBR1400LP-AT	Business series router with dual-mode, high-performance 4G LTE / HSPA+ wireless WAN connection for the AT&T network (802.11 a/b/g/n WiFi)
ARC MBR1400W	Business series router with high-performance WIMAX wireless WAN connection for the Sprint or CLEAR networks (802.11 a/b/g/n WiFi)

Cloud-Enabled Management and Application Platform	
WiPipe Central	Rapidly deploy and dynamically manage networks at geographically distributed stores and branch locations with WiPipe Central, a cloud-enabled application and security platform. WiPipe Central integrates cloud management with your CradlePoint devices to improve productivity, increase reliability, reduce costs, and enhance the intelligence of your network and business operations. • Deployment – configure devices by groups or individually, and update firmware easily with a few clicks. • Management – monitor device statuses and set proactive alerts for optimized 3G/4G data usage and network uptime. • Intelligence – view network analytics, manage security and PCI compliance, and measure mobile customer traffic using WiFi analytics. Annual and multi-year licenses available. See cradlepoint.com/wipipe for details.

Enterprise Support Agreements	
CradleCare Premium	When your applications are mission critical, you need the assurance that only the CradleCare Premier plan can provide: 24-hour coverage every day, all year – including holidays. As a CradleCare Premier customer, you will be assigned an account engineer* for consistency and follow-up on all your cases, with periodic case reviews provided. • Complete technical support, 24/7 coverage; unlimited 24-hour technical support center assistance; extended warranty; next-day parts replacement; assigned account engineer*; guaranteed response times; online video-based training sessions; software bug fixes and upgrades; advanced replacement; access to CradlePoint Enterprise Advanced Services Knowledge Base and online documentation. <i>*Account engineer for customers with 50+ sites.</i>
CradleCare Warranty Extension	This plan represents an extension of the standard 1-year CradlePoint warranty to 2 or 3 years. • One-time enterprise technical support; software bug fixes; access to CradlePoint Enterprise Advanced Services Knowledge Base and online documentation; hardware repair/replacement.

Accessories (see CradlePoint's antenna ordering and installation guide for more information)	
Part # 170587-000	Directional Patch antennas for external (outside) mounting
Part # 170588-000	Directional Yagi (Log-Periodic) antennas for external (outside) mounting
Part # 170586-000	Omni-directional antennas for external (outside) mounting
Part # 170605-000	12" Mag-mount antenna
Part # 170606-000	4" Mini mag-mount antenna

BUSINESS-GRADE MODEM SPECIFICATIONS:

ARC MBR1400LE-VZ	4G LTE/EVDO for Verizon
Technology: LTE, EVDO Rev A	
Downlink Rates: LTE 100 Mbps, EVDO 3.1 Mbps (theoretical)	
Uplink Rates: LTE 50 Mbps, EVDO 1.8 Mbps (theoretical)	
Frequency Bands: - LTE Band 13 (700 MHz) - CDMA EVDO Rev A/1xRTT (800/1900 MHz)	
Power: LTE 23 +/- 1 dBm, EVDO 24 +/- 1 dBm (typical conducted)	
Module: Sierra Wireless MC7750	
Antennas: two SMA male (plug), 1 dBi (LTE), 2 dBi (Cellular/PCS) gain; finger tighten only; maximum torque spec is 7 kgf-cm	
GPS: standalone GPS support	
Industry Standards & Certs: FCC, Verizon	
Modem Part Number: MC200LE-VZ	

ARC MBR1400LP-AT	4G/3G LTE/HSPA+ for AT&T
Technology: LTE, HSPA+	
Downlink Rates: LTE 100 Mbps, HSPA+ 21.1 Mbps (theoretical)	
Uplink Rates: LTE 50 Mbps, HSPA+ 5.76 Mbps (theoretical)	
Frequency Bands: - LTE Band 17 (700 MHz), Band 4 (AWS) - HSPA+/UMTS (850/1900/2100 MHz) - GSM/GPRS/EDGE (850/900/1800/1900 MHz)	
Power: LTE 23 +/- 1 dBm, UMTS 23 +/- 1 dBm (typical conducted)	
Module: Sierra Wireless MC7700	
Antennas: two SMA male (plug), 1 dBi (LTE), 2 dBi (Cellular/PCS) gain; finger tighten only; support for GPS on aux connection	
GPS: standalone GPS support	
Industry Standards & Certs: PTCRB, FCC, IC, AT&T	
Modem Part Number: MC200LP-AT	

ARC MBR1400W	4G WiMAX for Sprint or CLEAR
Technology: WiMAX 802.16e Wave 2	
Downlink Rates: 10 Mbps peak, 6 Mbps average	
Uplink Rates: 5 Mbps peak, 1.2 Mbps average	
Frequency Band: 2500 MHz band	
Power: 23.5 +/- 0.5 dBm (RSU/CPE)	
Module: Beceem 250 chipset	
Antennas: two SMA male (plug), 5 dBi gain; finger tighten only; maximum torque spec is 7 kgf-cm	
GPS: no GPS support	
Industry Standards & Certs: FCC, Sprint, CLEAR	
Modem Part Number: MC100W	

MICROS® Tablet POS Benefits

- Take payment from guests anywhere with Wi-Fi coverage
- Print customer receipts to a Bluetooth belt printer
- Use the device in the same way as any other full-sized POS workstation
- Accept credit cards, gift cards, and magnetic stripe ID cards



For Colleges and Universities

The Freedom to Accept Payment Anywhere

Take the MICROS® Tablet POS anywhere you have Wi-Fi coverage. The portable device is ideal for taking payments in remote locations away from registers, such as coffee carts, picnics, and sporting events.

The Functionality You Need

The Tablet POS accepts payments via credit cards, gift cards, and magnetic stripe ID cards. You can also print customer receipts to a Bluetooth belt printer (Epson TM-P60). The Tablet POS can be used as a portable

extra point-of-sale (POS) device when lines are getting long (e.g., take this device out into a long line, ring up a customer's items, and accept payment).

The Tablet POS runs a full version of MICROS POS software, so its configuration and use is the same as any other full-sized POS workstation. The Tablet POS Client Application Loader automates and simplifies software deployment and updates.

MICROS Versions Supported

- MICROS 3700 version 4.3 HF2 and above
- MICROS 9700 version 3.2 and above

Features

- Runs Microsoft® POS Ready 2009 so you can:
 - Run the full standalone resilient client (SAR) for MICROS POS
 - Log transactions offline
 - Run antivirus clients
 - Run other Windows 32-bit applications, such as VPN client applications
- 36-month manufacturer depot warranty



Comprehensive Solutions. Innovative Products. Dedicated Service.

The CBORD Group, Inc.
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Specifications

Feature	Description
Processor	Intel Atom Z530 1.6GHZ
RAM	1GB DDR2
Display	8.4" (diag) TFT LCD with resistive touch 800 x 600 resolution
Stylus	Included, non-electronic tip
Operating system	Microsoft POS Ready 2009
I/O ports	1 - USB 2.0 port
Storage	16GB flash module
Weight	Approx 2lbs.
Wireless interface	Wi-Fi 802.11a/g/n
Battery	Extended-life battery for extra runtime
MSR	3-track integrated OPOS MSR

Accessories

Desktop Charging Cradle

The docking cradle provides extra power, Ethernet, and USB ports. However, the cradle offers the ability to use hardwired instead of wireless technology.

Magnetic Stripe Reader

The magnetic stripe reader (MSR) is integrated into the DT362 for added convenience. It utilizes all three tracks and can be swiped in either direction.

Protective Rubber Grips

External Battery Pack

Single External Battery Pack Charger with AC Adapter and US Cord

Six-Bay Battery Charger



Epson Mobilink™ TM-P60

Comprehensive Solutions

CBORD provides campus card systems, integrated security solutions, housing management, food and nutrition management, catering solutions, and off-campus programs to more than 6,000 organizations. Our focus is on comprehensive solutions that increase revenue, reduce costs, enhance campus safety, improve student satisfaction, and integrate systems seamlessly.

Innovative Products

Our innovation is customer driven. Working in partnership with users, we listen to the industry's evolving needs and develop solutions to keep you a step ahead.

Dedicated Service

The quality of our products is made greater by the caliber of our employees. Through open dialogue with you, our customers, CBORD strives to not only meet, but exceed your expectations; we are committed to providing superior service in all aspects of our customer relationships. You can reach us twenty-four hours a day, seven days a week, and know you have a team dedicated to your satisfaction and success.

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